
Science Flight Report

Operation IceBridge Arctic 2012



Flight: F29
Mission: Southwest Glaciers 01

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	30
Flight Request	12P006
Date	Wednesday, April 25, 2012 (Z)
Purpose of Flight	Operation IceBridge Mission Southwest Glaciers 01
Take off time	10:28 Zulu from Kangerlussuaq (BGSF)
Landing time	18:18 Zulu at Kangerlussuaq (BGSF)
Flight Hours	7.8 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none">• Low-altitude survey (1,500) of glaciers and ice sheet profiles.• Completed entire mission as planned.• ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines.• Pitch and roll maneuvers for snow and Ku-band radar.• Ramp pass at 1,500 ft AGL at Kangerlussuaq.
Geographic Keywords	Sukkertoppen Ice Cap, Kangiata Nunaata Sermia
Satellite Tracks	ICESat tracks 0040,0412,0047,0159,0300
Repeat Mission	2011 partial

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	77 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.9 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	575 GB	30 minute data gap
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	575 GB	30 minute data gap
Accumulation Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	185 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	99.1 GB	None
KT-19 Skin Temp.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10 MB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
Magnetometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	560 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission is a new design, which incorporates previously-flown lines over Sukkertoppen Isflade and over four glaciers near Nuuk, including Kangiata Nunaata Sermia. We also fill in a coverage gap over the extreme southern lobe of the Greenland Ice Sheet on a series of ICESat lines, which connect with the Southeast Coastal grid lines flown in 2010 and 2011. We returned to Kangerlussuaq along a lengthy ICESat track over southern Greenland.

The weather was perfect today. We stayed away from the occlusion from the Iceland low. The low pressure system and the bad weather associated with it that will be moving in from the south has not caused any problems but the high clouds in the south indicated that this system is approaching rapidly.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM systems worked well and collected good data along the entire line in cloud free conditions. ATM collected a total of 7.4 hours of science data with 100% coverage. 5% of the primary system data was outside the range capability of the laser.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars failed in the beginning and 30 minutes of data was lost. Acquisition was switched over to the backup system while a bad cable was replaced.

Accumulation radar: Worked well today.

Gravimeter: Worked well.

Magnetometer: Worked well and used the SGL data logger today without problems.

DMS: DMS worked well and collected 17185 frames.

KT-19 skin temperature sensor: System worked well.

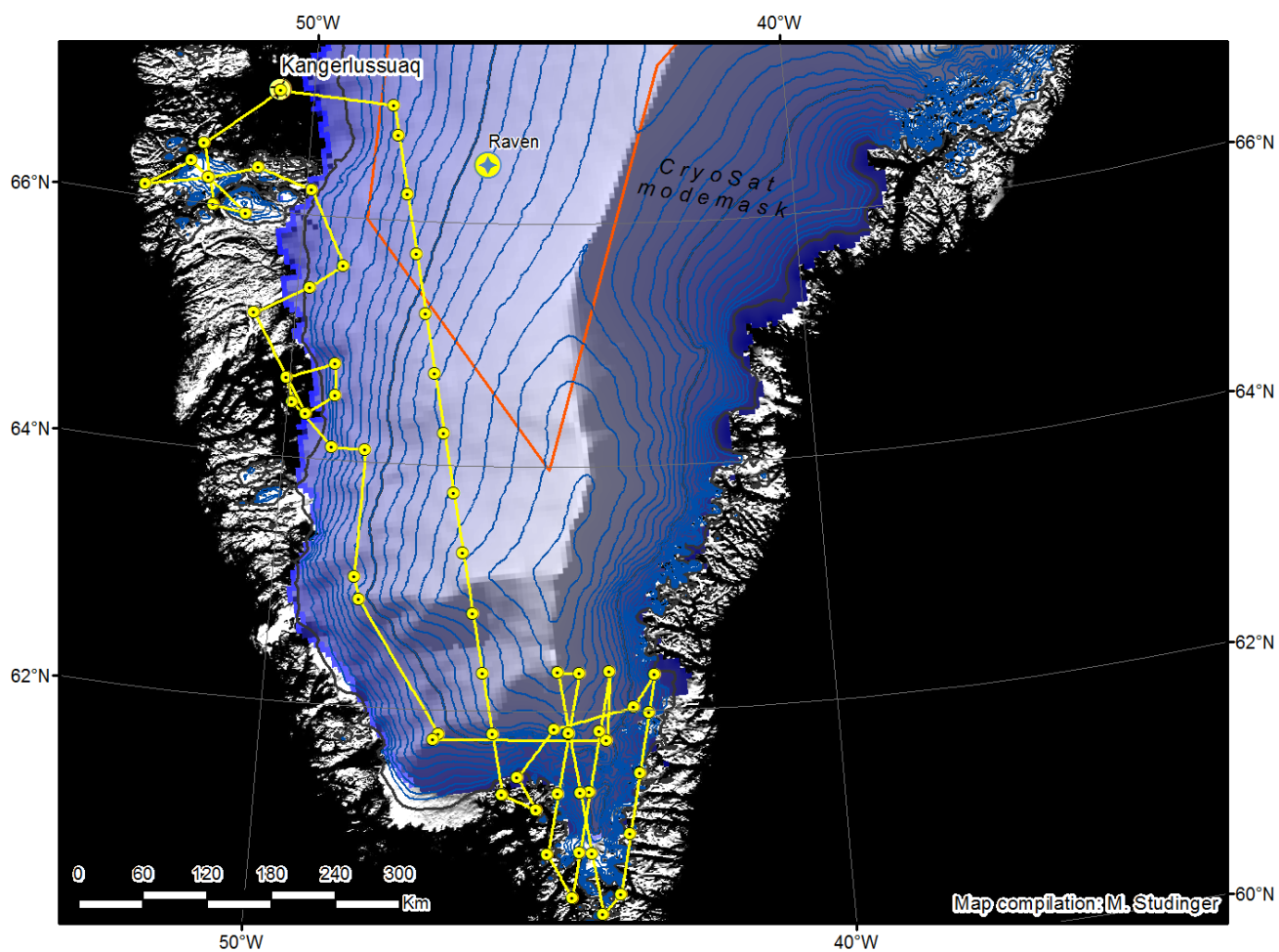


Figure 1: Today's mission plan (yellow).

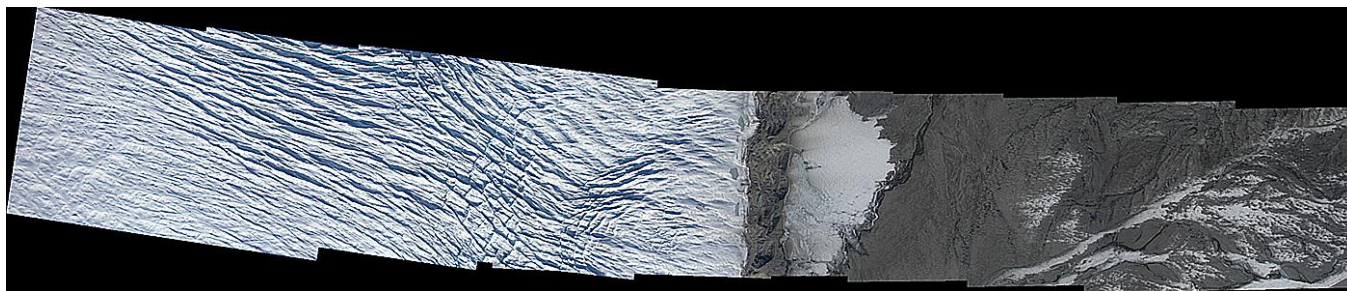


Figure 2: DMS mosaic of a calving front. DMS/James Jacobson.